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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/174,002 10/16/98 BOCH

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EXAMINER

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NGUYEN, P

ART UNIT

PAPER NUMBER

2732

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09/22/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/174,002

Applicant(s)
Erik H. Boch, Alan Jaakkola

Examiner
Phuongchau Ba Nguyen

Group Art Unit
2732



☒ Responsive to communication(s) filed on Jul 22, 1999

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 6, 7, 9-13, 15-18, 22, and 23 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 6, 7, 9-13, 15-18, 22, and 23 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☒ The proposed drawing correction, filed on Jul 22, 1999 is ☒ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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FINAL ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding to claims 11 & 17:

Claims 11 & 17 recite that ARIC is designated at base station and is controlled by a network manager. Claim 4 is rejected as being vague and indefinite because applicants do not show how the ARIC being controlled by the network manager.

Regarding to claims 12 & 13:

Claims 12 & 13 recite additional ARICs may be implemented as required in order to provide access to additional NIUs within each cellular area. Claims 12 & 13 are rejected as being vague and indefinite because applicant do not show how ARIC being implemented to provide access to additional NIUs within each cellular area.

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Regarding to claim 6:

It is not clear how TDMA ARICs are provided for communication from base station to NIU, and FDMA ARICs are also provided for communication from NIU to base station.

Regarding to claim 7:

which discloses FDMA ARICs are provided for bi-directional intercell radio communication. Claim 7 is rejected as being vague and indefinite because it is not seen how FDMA ARICs are provided for bi-directional intercell radio communication.

Regarding to claim 18:

Claim 18 is rejected as being vague and indefinite because it is unclear how increasing the number of ARIC at selected base station would relate with dividing geographic area into cellular area, thus make the broadband wireless access scalable?

Regarding to claim 22:

Claim 22 is rejected as being vague and indefinite because it is unclear how the switch system would function in combination with the first radio interface means and the second radio interface means? Claim 22 is also rejected as vague and indefinite because applicants do not show how the antenna achieve the high gain from 36 to 42 db, and what would be improved by using the high gain at this particular 36-42 db?

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Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

4. Claims 6 & 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Janky et al (5,790,527).

Regarding to claims 6-7:

Janky discloses a dual mode radio transceiver (interface system) selectively participated in trunked radio communication in either an FDMA mode or in a TDMA mode (400, dual mode site).

An interface system (**a dual mode repeater, 16a-b**) at a designated base station (**12, FDMA base station repeater**) in an asynchronous transfer mode (ATM) cellular wireless network, for providing bi-directional, point to multipoint access to network interface units (NIUs) at fixed customer sites within a cellular area, and for providing a point to point bi-directional radio access link for intercell communication with a base station (**14, FDMA base station repeater**) in an adjacent cellular area (**this feature is inherent in the FDMA base station repeater [12] when this base station [12] is communicating with other base/mobile stations [NIUs] using FDMA mode**), wherein said interface system (**a dual mode repeater**)

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includes an ATM radio interface card (ARIC) [**a dual mode transceiver**], and time division multiple access (TDMA) ARICs [**TDMA repeater, 406**] are provided for communication from said base station to said NIUs (**a dual mode repeater operates in TDMA mode**), and frequency division multiple access (FDMA) ARICs [**FDMA repeater, 404**] are provided for communication from said NIUs to said base station (**a dual mode repeater operates in FDMA mode**). [see fig. 2, col.5, 22-col.6, 33 & see fig.16, col.18, 10-col.19, 63]

Regarding to claims 9, 15-16:

Janky does not disclose a system for providing broadband wireless communication over a large geographic area subdivided into a plurality of overlapping cellular area comprising a base station and one or more customer sites within each cellular area.

Janky further discloses, in figure 1, a trunk mobile communication are located in a large geographical area referred to as a "site" on the order of 2000 square miles, e.g. corresponding to a radius of about 25-30 square miles. Base station repeaters receives and retransmits signal to other receiving mobile radio units (10b) within the site area (**cellular area**) on another frequency (f2). Each base station repeater in a site is assigned its own frequency pair or channel. (Col.1, 26-44)

Moreover, it is well known in the art to refer the site areas as a cellular areas.

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Regarding to claims 10, 12-13:

Claims 10, 12 are rejected with the same reasons as set forth in claims 6 & 9.

Regarding to claims 11, 17:

Janky further discloses in figure 16 a system manager (205, fig.11) (a network manager) for maintaining (for controlling the system) a database of the master channel numbering assignment plan for all radio and group IDs in the multisite system. (Col. 20, 21-29)

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Janky et al (5,790,527).

Janky does not disclose broadband wireless access is scaleable by increasing the number of ARICs at selected base stations.

It would have been obvious to one with ordinary skill in the art at the time of the invention was made to add more repeaters to the Janky system as claimed. The motivation is to

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increase the capacity and efficient use of channel bandwidth to many user per channel and to provide the flexibility of repeater at different access modes (TDMA or FDMA).

7. Claims 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Janky et al (5,790,527) as applied in claims 1-18 above, and further in view of Takiyasu et al (5,537,414).

Janky discloses, in figs. 12 & 16, a base station for use in a cell of a cellular, broadband wireless communication network comprises:

- A switching system (^{controller} **Multisite network switch**, **This switch also reads on ATM switch as claim 23**)
- A first radio interface means (**repeater, 434**) integral to the switching system for supporting communications between the base station and one or more network interface units within the cell
- A second radio interface means (**repeaters, 405 & 406**) integral to the switching system for providing an intercell link whereby the base station communicates with a further base station associated with another cell of the network,
- The second radio interface means includes one or more radio interface cards coupled through a transmitter (**248**) and receiver (**214**) to a high gain antenna (**206**).

Janky does not disclose the high gain antenna is 36-42 db and the one or more radio interface cards are connected to a combiner which in turn is connected to the transmitter and receiver

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Takiyasu discloses, in fig.26, an RF amplifier (416) controlling the gain of amplifier to a predetermined level and transmitting from an antenna (col.29, 34-col.30, 30).

Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention was made to use the amplifier in the Takiyasu system to adjust the transmitting power at the antenna to a high gain 36-42 db or higher/lower corresponding to the required transmitting power as predetermined to provide the best quality of signals transmitted.

Response to Amendment

Applicants did not revise the claims language to clear and concise states nor response to examiner's previous office action questioning corresponded to the confusions caused by the claims language presenting the invention. Therefore, this office action is made final.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuongchau Ba Nguyen whose telephone number is (703) 305-0093.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doug Olms, can be reached on (703) 305-4703. The fax number for this group is (703)305-9509.

Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist whose telephone number is (703) 305-3900.

PN

P.NGUYEN

September 19, 1999



CHAU NGUYEN
PRIMARY EXAMINER